

Introduction to Computing (ITC)

Spring 2021: Assignment 2

**INSTRUCTIONS:**

**Deadline Date:** **­­­­­­­­­­­­­3rd May, 2021 till 5 pm (SOFT COPY)**

* **This is an individual Assignment.**
* **Viva/Quiz may be conducted for evaluation in next class**
* **SUBMIT SOFT SOLUTION ON CMS Portal (LATE PENALTY 25% PER DAY)**
* **ATTACH THIS TITLE PAGE AFTER FILLING TO YOUR ASSIGNMENT (5 MARKS)**
* **SUBMIT .cpp FILE ON CMS PORTAL FOR ALL QUESTIONS.**
* **DRAW FLOW CHART FOR EACH QUESTION ON PAPER AND ATTACH CLEAR PICTURES OF FLOW CHART ON WORD DOCUMENT.**
* **ATTACH ZIP FILE TO PORTAL CONTAINING FLOW CHART WORD DOCUMENT AND .cpp FILE.**

**FOR ONLINE SUBMISSION NAMING CONVENTION: (5 MARKS)**

\***FILES WITH WRONG NAME OR EXTENSION WILL BE DELETED** Use the following pattern for naming the file

(A2SectionNameFourDigitRollNumberFirstName.docx) e.g. A2M20346Haris.docx

**Total Marks= 40 (30+10 for front page)**

**Question no. 1: (5+5)**

1. **Write C++ Program for following flow chart. (5)**

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| //Copy-paste your code here |

1. **Draw flow chart for following C++ Program. (5)**

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| #include <iostream>  using namespace std;  int main()  {  int a, b, sum, diff, mult, div, mod;  char opr;  cout << "Enter two integers : ";  cin >> a >> b;  cout << "Enter Arithmetic Operator: ";  cin >> opr;  if (opr == '+')  {  sum = a + b;  cout << a<<"+"<<b <<"="<< sum << endl;  }  else if (opr == '-')  {  diff = a - b;  cout << a << "-" << b << "=" << diff << endl;  }  else if (opr == '\*')  {  mult = a \* b;  cout << a << "x" << b << "=" << mult << endl;  }  else if (opr == '/')  {  if (b != 0)  {  div = a / b;  cout << a << "/" << b << "=" << div << endl;  }  else  {  cout << "Undefined\n";  }  }  else if (opr == '%')  {  mod = a % b;  cout << a << "%" << b << "=" << mod << endl;  }  else  {  cout << "Invalid operator\n";  }    } |

**Question No. 2 (5+5 =10)**

Draw flowchart and write a C++ program in which the user enters a number and your program calculates and displays the sum of the digits of that number.

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| **Example 1:**  Enter a number: 157  Sum of digits is 13 | **Example 2:**  Enter a number: 2142  Sum of digits is 9 | **Example 3:**  Enter a number: 71183  Sum of digits is 20 | **Example 4:**  Enter a number: 3  Sum of digits is 3 |

**Note:** *Keep in mind that the user can enter a number of any length. You must use* ***sentinel-controlled******loop*** *to solve this question.*

**Question No. 3 (5+5 =10)**

Write a program that takes 10 character-type input from user. In the end, your program should display count of Capital and small alphabets, count of integers and special characters.

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| **Sample Output:**  Enter 10 characters: A B C t g 1 0 $ ^ #  Total Capital Letters are: 3  Total Small Letters are: 2  Total Integer values are: 2  Total Special characters are: 3 |